



Camdenton TCE Sites Camdenton, Camden County, Missouri

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Site Description

Past manufacturing activities have created or contributed to at least six sources of environmental contamination throughout the Camdenton area, each of which will be discussed further in this document under "Investigation and Cleanup."

Between 1967 and 2012, a manufacturing facility located at 221 Sunset Drive in Camdenton produced aluminum and copper heat transfer units under a succession of owners and operators. These were: Dawson Metal Products, Sundstrand Tubular Products, Inc. (now Raytheon), and Modine Heat Transfer Inc. (Modine). During Dawson and Sundstrand's facility operation, the volatile organic compound (VOC) trichloroethylene (TCE), was used as a degreasing agent. As a result, TCE releases occurred at the facility.

In July 1972, a fire damaged a portion of the 221 Sunset Drive facility. Dawson Metal Products continued operations in the undamaged areas, but some of the operations were moved to 1225 U.S. Highway 54 for approximately one year, while repairs were made. The Department designated the temporary operation at 1225 U.S. Highway 54 as Dawson Metal Products Facility #2.

Former Dawson Metal Products employees have reported that drums of used TCE were dumped directly onto the facility's soil for the duration of its operations. In 1990, Modine purchased the 221 Sunset Drive facility and discontinued the use of TCE at that time.

City Lagoon #3, a wastewater lagoon formerly referred to as Hulett Lagoon, received untreated wastewater containing TCE and other contaminants from the 221 Sunset Drive facility over several decades. In 1989, the city closed the lagoon and removed the sludge to the Camdenton Sludge Disposal Area, a permitted disposal site and open field located southeast of the Camdenton Memorial Airport. An estimated 2,935 cubic yards of sludge were deposited at the disposal area by subsurface application in accordance with a sludge disposal plan approved by the Department.

In February 1998, TCE was detected above the maximum contaminant level (MCL) of 5 parts per billion in the Mulberry Well, a public drinking water supply well. MCLs are applied using yearly running averages. In February 1999, the city officially took the Mulberry Well offline due to increasing TCE levels. The Mulberry Well was disconnected from the city's water supply system and is no longer used for drinking water. This well's TCE contamination likely came from releases at the Sunset Drive facility and City Lagoon #3. Because TCE was a widely used degreaser in manufacturing during this time, it is difficult to identify with certainty, every possible source of TCE contamination in the groundwater that supplies Mulberry Well.

In 1987, wastewater from the 221 Sunset Drive facility was rerouted to the Camdenton Treatment Plant Lagoon (CTPL), also known as the C.P. White Lagoon. The discharge of suspected contaminated wastewater into the CTPL occurred from December 1987 to June 1989. In June

1989, a new centralized wastewater treatment plant was built near the CTPL to replace Camdenton's original wastewater lagoons.

Description of Contamination

The site's primary contaminants of concern are TCE and related chemicals that form when TCE breaks down in the environment. TCE exposure primarily occurs through breathing TCE vapors in the air or by drinking contaminated water. Exposure to TCE has been associated with a number of adverse health effects. Additional information about the health effects of TCE exposure are available in the Agency for Toxic Substances and Disease Registry's trichloroethylene fact sheet at atsdr.cdc.gov/toxfaqs/tfacts19.pdf.

Individuals working in facilities that use TCE can be exposed to TCE and byproduct vapors; however, people can also be exposed in buildings near contaminated soil and groundwater through vapor intrusion. Vapor intrusion occurs when contaminants within the soil or groundwater evaporate or break down into a gas and then migrate (or intrude) into a structure. While levels of exposure to TCE via vapor intrusion are often much lower than those encountered in facilities that use TCE, they can still exceed safe levels. A separate fact sheet with additional information about vapor intrusion is available from the Missouri Department of Health and Senior Services at health.mo.gov/living/environment/hazsubstancesites/pdf/VaporIntrusion.pdf.

How the releases occurred at the six sites and the exact volume of TCE released have not been confirmed. However, sampling data indicated that TCE was present in the soil surrounding City Lagoon #3, in and around the 221 Sunset Drive facility, and to a lesser extent, in the soil at the Dawson Metal Products Facility #2. TCE and related contaminants have also been detected in groundwater near the 221 Sunset Drive and City Lagoon sites.

Investigation and Cleanup Activities

The site map below shows six impacted areas or sites in the Camdenton area: the currently vacant 221 Sunset Drive facility, the Former City Lagoon #3, the Mulberry Well, the Dawson Metal Products Facility #2, the Camdenton Treatment Plant Lagoon, and the Camdenton Sludge Disposal Area. These six sites have undergone varying degrees of investigation and cleanup activities.

- 221 Sunset Drive Facility

Though the site is currently owned by Mai Investments LLC, Modine is addressing investigation and cleanup activities under Resource Conservation and Recovery Act oversight. In 2002, TCE-contaminated soil was removed from the parking area on the building's west side and properly disposed of at an off-site landfill. Recent investigations have confirmed that TCE is also present in the air inside the manufacturing building. Modine conducted additional investigations to design a vapor intrusion mitigation system at the building and this system is currently under construction. The Department is currently reviewing the remedy proposal Modine prepared to address soil contamination beneath the facility's footprint.

- City Lagoon #3

City Lagoon #3 was closed in 1989 and the contaminated sludge was removed and transported to an approved disposal facility. A remedial investigation and feasibility study were completed in 2003 and 2004, respectively. The Department is currently overseeing site cleanup and investigation under a supplemental remedial investigation and feasibility study.

The soil at the lagoon was sampled during the 2003 remedial investigation and contaminants were found above their detection limits. The soil contamination in the former lagoon does not

present any exposure risk under current site use. Additional soil sampling is planned to more completely characterize the site's soil contamination.

The groundwater below and around the lagoon has shown evidence of contamination. Several groundwater monitoring wells have been installed in both the deep aquifer and shallow groundwater to monitor for contaminants. Installation of additional wells and repair of existing wells is planned to support the implementation of a more comprehensive groundwater monitoring program.

In 2018, a soil gas and vapor intrusion investigation began, but found no vapor intrusion exposure pathways at the former lagoon.

- **Mulberry Well**

The Mulberry Well, a former public drinking water supply well, is located close to the 221 Sunset Drive and City Lagoon #3 sites. Since the well was removed from service in 1999, the city has used it as an interim measure to aid in reducing the spread of groundwater contaminants. Beginning in early 2000, the city has pumped contaminated water from the well and allowed the contaminants to evaporate from the water prior to discharge. Monthly testing results can be found on the Department's Camdenton Sites webpage at dnr.mo.gov/waste-recycling/sites-regulated-facilities/superfund/interest/cAMDENTON-TCE/mulberry-well.

- **Dawson Metal Products Facility #2**

In 2017, the Department began a series of environmental investigations at the Dawson Metal Products Facility #2 with a pre-Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site screening, and completed investigations with a site inspection report in March 2019. These investigations documented soil contamination at the site and vapor intrusion into the building. The Department also collected samples from private and public wells within 1 mile of the site; no TCE or other VOCs were detected in any of the well water samples.

In 2018, a vapor intrusion mitigation system was installed at the facility to address vapor intrusion risks. Since 2019, the potentially responsible parties have been performing remedial investigation activities under Department oversight. Investigation activities included characterization of contaminated soil areas, installation and sampling of groundwater monitoring wells, and monitoring of indoor air at the facility.

- **Camdenton Treatment Plant Lagoon (CTPL)**

In 2017, in response to concerns raised by local community members, the Department investigated the CTPL. In 2018, the Department prepared a pre-CERCLA screening report, which concluded that an estimated 3 gallons of TCE was potentially discharged into the CTPL. Following the recommendation of the pre-CERCLA screening report, the Department conducted an additional sampling investigation and prepared a site inspection report in 2019. None of the samples showed detections of TCE or its breakdown products. Based on the site inspection results, no further action was necessary.

- **Camdenton Sludge Disposal Area**

The contractor tested the sludge deposited at the Camdenton sludge disposal area during mixing and land application to ensure it met specified levels. The sludge-soil mixture was mixed with lime to reduce the mobility of metals and to raise the soil's pH level.

In 1999, the Department completed a preliminary assessment/site inspection of the sludge disposal area's soil and groundwater. None of the samples showed detections of TCE or its breakdown products. However, soil sampling did indicate that chromium, copper, lead, and nickel were present above background levels, but below regulatory limits.

Beginning in 2017, the Department conducted a site reassessment of the Camdenton sludge disposal area. This was in response to community concerns regarding the potential for groundwater impacts and undocumented sludge disposal in areas that were not part of the permitted disposal area. The Department collected samples from private and public wells within 0.5 mile of the site; no TCE or other VOCs were detected. The Department did not find any evidence that waste from City Lagoon #3 was deposited anywhere other than the approved disposal area, and concluded that no additional action was necessary.

For More Information

For more information regarding these sites, contact the Department's Environmental Remediation Program at 800-361-4827 or 573-751-3176. For health-related questions about TCE, contact the Missouri Department of Health and Senior Services at 573-751-6102.

Site Location Aerial Map

